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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/542,822

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Roy H Hammerstedt

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EXAMINER

BASS, DIRK R

ART UNIT

PAPER NUMBER

4132

MAIL DATE

DELIVERY MODE

01/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,822	Applicant(s) HAMMERSTEDT, ROY H	
	Examiner DIRK BASS	Art Unit 4132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>Dec. 8, 2006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 2-3 are objected to because of the following informalities: claims 2-3 state "said transmembrane passageways" and are both dependent upon claim 1 which states only a "membrane". Appropriate correction is required.
2. Claim 6 is objected to because of the following informalities: there is no space between the words "wherein" and "the" on line 1 of claim 6. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 7-24 provide for the use of a capillary-pore membrane configured as in claims 2 or 3, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Moreover, these claims depend from Claims 2 and 3, which are method claims, not article claims. It is unclear what is the nature of the dependence since the plain meaning of these claims would suggest that the claimed method is a method of using a method, but it would appear that the claimed

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method should rather relate to a method of using an article as formed by the method of Claims 2 and 3.

Claim Rejections - 35 USC § 101

5. Claims 7-24 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hicke et al., *Novel enzyme-membrane reactor for polysaccharide synthesis.*, Journal of Membrane Science (August 1999), Vol 161, pgs. 239-245.

8. Regarding claim 1, Hicke discloses a method for altering the properties of a capillary-pore membrane by linking at least one compound to said membrane via an endogenous carboxyl group inherent in said membrane (see abstract and **Introduction**, fourth paragraph).

9. Based on applicants admission that the “attachment of active molecules” uses “endogenous carboxyl groups residual from initial manufacture” (last sentence, ¶ 0007), it is inherent in Hicke that the commercially available capillary-pore membrane (see **Introduction**, fourth paragraph and **Experimental**, first paragraph) has residual carboxyl groups that are capable of being modified.

10. Furthermore, after photografting of the capillary-pore membranes to evenly functionalize the capillary-pore membranes with carboxylic groups (see **Introduction**, fourth paragraph), it is interpreted that these additional carboxylic groups are endogenous of the final product, i.e. the functionalized capillary-pore membranes. Moreover, to the extent that these carboxyl groups are not endogenous, applicant has not demonstrated that any structural or compositional feature of such claimed endogenous carboxyl groups is absent in those formed in the disclosed manner.

11. Regarding claim 2, Hicke discloses a method wherein said alteration of said capillary-pore membrane is by attachment of one or more molecules, particles, units of matter, or combination thereof within one or more of said transmembrane passageways via covalent linkage with said endogenous carboxyl groups using any chemical procedure, thereby forming a configured separation membrane (see “sequential activation/coupling”, **Introduction**, fourth paragraph).

12. Regarding claim 3, Hicke discloses a method wherein said endogenous carboxyl groups are modified using any chemical procedure prior to covalent attachment of one or more of molecules, particles, units of matter, or combination thereof within one or more of said transmembrane passageways using any chemical procedure, thereby

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forming a configured separation membrane (see “functionalized by...copolymerization of AEMA”, **Materials**, section 2.2, paragraph 1).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hicke et al., *Novel enzyme-membrane reactor for polysaccharide synthesis.*, Journal of Membrane Science (August 1999), Vol 161, pgs. 239-245 in view of Takenishi et al., US 6017742.

16. Hicke is relied upon as above in the rejections of Claims 1-3.

17. Regarding claims 4-5, Hicke fails to disclose a method wherein a carbodiimide reaction is used to accomplish said alteration of said membrane by linkage of a

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molecule, particle, or unit of matter containing an amine group or thiol group with said endogenous carboxyl groups.

18. Takenishi ('742) discloses utilizing carbodiimide derivatives to perform a condensation reaction between carboxylic acid and an amine group or thiol group (col. 5, l. 8-11) to immobilize biologically active substances (see abstract).

19. At the time of the invention, it would have been obvious to one skilled in the art to combine the carbodiimide reaction of Takenishi ('742) with the method of Hicke in order to immobilize biologically active substances utilized for further separation or analysis techniques.

20. Regarding claim 6, Hicke fails to disclose a method wherein the endogenous carboxyl groups are reacted to form anhydrides.

21. Takenishi ('742) discloses carboxyl groups being reacted to form anhydrides (col. 2, l. 64-66) to immobilize biologically active substances (see abstract).

22. At the time of the invention, it would have been obvious to one skilled in the art to combine the formation of anhydrides step of Takenishi ('742) with the method of Hicke in order to immobilize biologically active substances utilized for further separation or analysis techniques.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIRK BASS whose telephone number is (571)270-7370.

The examiner can normally be reached on Monday - Thursday 10am-4pm.

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24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MIKE LAVILLA can be reached on 5712721539. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DRB/

Dirk R. Bass

January 14, 2009

/Michael La Villa/

Michael La Villa

Supervisory Patent Examiner, Art Unit 4132

15 January 2009